

REMARKS

Reconsideration of the application is requested.

Claims 1-38 remain in the application. Claims 1-11 and 16-36 are subject to examination and claims 12-15, 37, and 38 have been withdrawn from examination. Claims 1-38 have been amended.

Under the heading "election/Restrictions" on page 2 of the above-identified Office Action, the Examiner acknowledged the election, with traverse, of claims 1-11 and 16-36.

The Examiner stated that the common technical feature of the two groups is known in the prior art. Applicant, however, respectfully disagrees.

The processing plant described by claim 12 is characterized in that the first portion includes at least **preparation means** for preparing, before joining, the tail of a coil and the head of a new coil, and at least the second portion includes at least **means for finishing** the welded junction (see claim 12). Thus, said first and second portions correspond exactly to said first and second portion required by claim 1, and are features of the central idea of the invention: "breaking down the Junction cycle into two separate phases" (see the specification at page 8, lines 15-16). In other words, the essential idea of the invention is to realize a provisional junction in the first portion of the processing plant in order to solve the technical problem disclosed in the specification at

page 6, line 32 to page 7, line 20, i.e. continuous running of the band while working with very short coil.

Moreover, the specification teaches:

"a **first preparation cycle** for preparing the ends, respectively tail and head ends of both bands for the junction thereof and a **second junction cycle** for joining the two facing edges of said ends" (see the specification at page 7, line 35 to page 8, line 2);

"the time necessary to perform all the connection operations of both bands is divided into at least two time periods, respectively a **first time period corresponding to the first preparation cycle** and to a first phase of the second junction cycle of the facing edges of both bands and a **second time period corresponding to a second phase of the second junction cycle**" (see the specification at page 8, lines 7-12);
and

"the running being stopped again in the second portion of the inlet section to perform at least one finishing operation during a second time period of the junction cycle" (see the specification at page 8, lines 23-26).

Consequently, the **preparation means** of the said first portion disclosed in

claim 12 refer at least to the first time period disclosed in claim 1, since the first time period is related to, at least, the first preparation cycle for preparing the tail and head ends of two consecutive coils. Similarly the **means for finishing** the welded junction appearing in claim 12 are related to the second time period disclosed in claim 1 (see the specification at page 8, lines 23-26), since the second time period is related to the second phase of the second junction cycle, which is itself related, for example, to the steps N-K (see the specification at page 17, lines 20-21 and at page 17, lines 31-35) for finishing the welded junction (see the specification p. 5, lines 15-21).

Thus, claims 1 and 12 share common features for solving the same technical problem related to short coils. These common features are special technical features that are related to the novelty of the invention.

Applicant requests rejoinder of the claims of group II, namely, claims 12-15, 37, and 38.

Under the heading "Claim Rejections – 35 USC § 112" on page 2 of the above-identified Office Action, claims 16 and 17 have been rejected as being indefinite under 35 U.S.C. § 112, second paragraph.

The terms, "the unwinding" has been deleted from claims 16 and 17. Claims 16 and 17 have been amended to include the terms "completely unwinding the first coil.

It is accordingly believed that the claims meet the requirements of 35 U.S.C. § 112, second paragraph. The above-noted changes to the claims are provided solely for clarification or cosmetic reasons. The changes are neither provided for overcoming the prior art nor do they narrow the scope of the claim for any reason related to the statutory requirements for a patent.

Under the heading “Claim Rejections – 35 USC § 103” on page 3 of the above-identified Office Action, claims 1-10 and 16-36 have been rejected as being obvious over U.S. Patent No. 2,662,271 to Greenberger in view of U.S. Patent No. 3,365,144 to Daub under 35 U.S.C. § 103. Applicant respectfully traverses.

Claim 1 includes the following limitation:

“characterized in that joining the facing edges of the ends of both bands is performed in at least two portions of the inlet section, respectively a first portion and a second portion, between which is located an intermediate accumulator for setting aside a variable band length, and that the time period necessary to perform all the connection operations of both bands is divided into at least two time periods respectively a first time period corresponding to the first preparation cycle and to a first phase of the second junction cycle of the facing edges of both bands, and a second time period corresponding to a second phase of the second junction cycle, said both time periods being separate by a

time interval of variable duration corresponding to the running of the band length set aside in the intermediate accumulator.”

The Examiner has acknowledged that Greenberger does not teach this limitation, but has alleged that Daub does teach the limitation, and that Daub would have suggested modifying the teaching in Greenberger. Applicant does not agree.

Before going further, applicant wants to point out some differences between the features disclosed in the patent application, Greenberger and Daub.

The present patent application discloses that, in the inlet section of the processing plant, preparing operations and joining operations of the ends of two consecutive bands are conducted (see the specification at page 2, lines 7-11). The preparing and joining operations define respectively two cycles (see the specification at page 2, line 29 to page 3, line 3):

- said **preparation cycle** including cropping the tail of the first band and positioning this latter into the welding machine, and after inserting the next band, cropping its head and positioning it in the welding machine; and
- said **junction cycle** including shearing the ends of both bands to form two parallel facing edges, bringing them closer to one another, welding

them and finishing the welded spot.

In order to do these operations, the running speed of the band has to be lowered or sometimes the running of the band has to be stopped (see the specification at page 3, lines 19-23). Since processing operations, which are realized in the processing section located after the inlet section, require a constant running speed, it is then necessary to set aside variable band lengths. This is done by means of an accumulator located between the inlet section and the processing section. Due to the high running speeds, the length of the band that has to be set aside reaches 400-600 meters and consequently, the accumulator should have a capacity between 400 and 600 meters in order to supply the processing section during the stoppage time in the inlet section (specification at page 6, lines 17-22). The problem arises from processing short coils that have band lengths less than 400 meters. The coils are too short to allow the constant running speed of the band in the processing section, because it is not possible to set aside 400 to 600 meters of the band.

Greenberger and Daub are not concerned with this problem, which is related to a continuous in-line processing plant, because both are old patents. They were respectively filed in 1948 and 1966 and disclose old techniques of band processing, and at that time, the problem related to high running speeds and to short coils did not yet exist. This problem only appeared recently.

An essential idea of the invention consists therefore in breaking down the junction cycle into two separate phases, with setting aside a variable band

length in an intermediate accumulator (see the specification at page 8, lines 15-17). The junction cycle includes shearing the ends of both bands to form two parallel facing edges (this kind of shearing is completely different from shearing the head and tail of a new coil, which is generally done due to defects of the head and tail of the coil), bringing them closer to one another, welding them and finishing the welded spot (see the specification at page 3, lines 1-3). In a first embodiment of the invention, a first phase of the junction cycle includes joining the ends of both bands by welding in a welding machine and a second phase of the junction cycle includes finishing operations realized after passing the band in the intermediate accumulator (see the specification at page 8, lines 18-26). In a second embodiment of the invention, a first phase of the junction cycle includes a temporary junction of the ends of both bands, and a second phase of the junction cycle comprises welding and finishing operations (see the specification at page 8, line 27 to page 9, line 37).

Claim 1 requires that the junction cycle be divided into **two separate phases**. Interpretation of this limitation may be performed by referring to the specification:

“the time period necessary to perform all the connection operations of both bands is divided into at least two time periods, respectively a first time period corresponding to the first preparation cycle and to **a first phase of the second junction cycle** of the facing edges of both bands, and a second time period corresponding **to a second phase of the**

second junction cycle"

Applicant first points out that, contrary to the opinion of the Examiner, neither Greenberger, nor Daub disclose breaking down the junction cycle into two separate phases as is required by claim 1.

In fact, Greenberger discloses that:

"the trailing end is squared off in the shear 14, and the forward motion thereof interrupted in either the welder 24 or the stitcher 25 depending upon in which unit the joining operation is to be performed" (col. 3, lines 38-42).

Thus, all joining operations are realized at the same place, whereas in the claimed invention, the place where the phases are realized are separated by an accumulator for setting aside a variable band length (see Fig. 2 and 4 of the patent application), and for example, Greenberger does not disclose that finishing operations are realized in another portion of the inlet section.

Daub teaches:

"the entering front end is joined to the rear end of the other strip by means of welding that is not subject to reworking and thereby serves essentially as tack welding during the passage through the processing line" (col. 2, lines 16-20).

Again, Daub does not teach separating the junction cycle into two phases as is required by claim 1. On the contrary, Daub discloses a unique joining operation which is **not** subjected to reworking. Of course, Daub discloses two welding places (welding machines 5 and 12), each dedicated to one junction operation, but for each of these welding places, the welding operation is not subjected to reworking (col. 3, lines 4(48) and consequently, not separated into two phases. Moreover, the welding operations are realized on two different pairs of band ends that are joined together. Effectively, a head and a tail of two bands are joined by the welding machine 5, and then other head and tail of bands are joined by the welding machine 12. In contrast, claim 1 specifies that the same head and tail of two consecutive coils are joined into two phases. Thus, this processing for joining the ends of two coils as described by Daub (see col. 3, lines 11-63) has nothing to do with separating a junction cycle into two phases with setting aside a variable band length in an intermediate accumulator.

Moreover, the processing plant as described by Daub is not a continuous in line processing plant, as is required in the preamble of claim 1. In fact, there are two distinct processing plants disclosed in Daub: a first processing plant for the sections situated before the mandrel, and a second processing plant for the sections situated after the mandrel. Additionally, the presence of the mandrel means that there is a discontinuity in the line, since the band of the first processing plant does not move continuously to the second processing plant.

Applicant also believes the Examiner has expressed two other opinions that not correct. First, according to the Examiner's opinion (see Office Action, page 3, item 2), the processing section corresponds to the looping pit 18 of Greenberger and thus is located inside the inlet section. In contrast, claim 1 specifies that the processing section is located after the inlet section. It is also not coherent with the fact that, according to the Examiner's opinion, the processing section (looping pit 18 of Greenberger) is supplied, during the stoppage time, with a band length set aside beforehand in the upstream accumulator (pit 27), since the pit 18 precedes the pit 27.

Second, contrary to the assertion of the Examiner with regard to Daub, (see page 5, line 18 of the Office Action), pickling operations are not finishing operations related to junction operations. An example of finishing operation is planning the welded spot (see the specification at page 14, lines 29-30). Applicants therefore believe there is no doubt that the invention as defined by claim 1 would not have been suggested by Greenberger and Daub.

Applicant will now further discuss the teaching in Greenberger. Greenberger discloses that looping pits 18 and 27 serve as accumulators. This kind of accumulator is an essential feature of the device of Greenberger, since it allows the band to by-pass the pit over the movable conveyor table (see col. 3, lines 45-48). However, this kind of pit, in which the band is accumulated forming some loops, is not compatible with the "normal" running speed of the bands of

the actual processing plants (400 – 600 m/mn). Applicants believe that one of ordinary skill in the art would not have an interest in this teaching since the processing plant of Greenberger cannot be run at the running speed of 400 – 600 m/mn, which is known to be “normal” by one of ordinary skill in the art. Applicants also believe that the feature of claim 1, which requires “carrying on the process at a normal running speed”, is not suggested by Greenberger, since the processing plant of Greenberger cannot be run at the normal running speed of 400 – 600 m/mn.

The same reasoning might be used for Daub, which discloses a processing plant configuration that cannot be run at the running speed (400 – 600 m/mn) that is known to be “normal” by one of ordinary skill in the art. Applicant also points out that claim 1 defines a method for managing the feed of a new coil into a continuous inline processing plant; however Daub does not teach a continuous inline processing plant since the line is broken by the turntable 8.

Moreover, claim 1 specifies that:

“the time period necessary to perform all the connection operations of both bands is divided into at least two time periods, respectively a first time period corresponding to the first preparation cycle and to **a first phase of the second junction cycle** of the facing edges of both bands, and a second time period corresponding **to a second phase of the second junction cycle**”.

The technical effect associated with these features relies on "breaking down the junction cycle into two separate phases, with setting aside a variable band length in an intermediate accumulator" (see the specification at page 8, lines 15-17). Therefore, the objective underlying problem is to reduce the stoppage idle time of the unwinding of the coils in the inlet section (see the specification, page 1, lines 9-10) so that it becomes possible to set aside a sufficiently long band length in a continuous inline processing plant while working with short coils at a high running speed in order to supply the processing section with a constant band running speed during the stoppage time in the inlet section (see the specification at page 6, lines 17-22 and page 7, lines 15-20).

One of ordinary skill in the art considering the teaching of Greenberger, and who wants to solve the problem of **reducing the stoppage idle time of the unwinding of the coils in the inlet section** could not and would not find a solution based on breaking down the junction cycle into two separate phases, with setting aside a variable band length in an intermediate accumulator. Moreover, one of ordinary skill in the art could not find any information by considering Daub, since Daub discloses a discontinuous inline processing plant which allows one to combine different unfinished coils into one starting coil that will be subsequently used in a continuous processing line. None of the cited patents disclose information related to breaking down a junction cycle into two separate phases in order to reduce the stoppage idle time of the unwinding of the coils in the inlet section, since on the contrary, both patents disclose a

global joining operation realized in one phase at one place of the inlet section of the processing plant.

Applicants believe that the invention as defined by claim 1 is not suggested by Greenberger and Daub.

Under the heading "Claim Rejections – 35 USC § 103" on page 8 of the above-identified Office Action, claim 11 has been rejected as being obvious over U.S. Patent No. 2,662,271 to Greenberger and U.S. Patent No. 3,365,144 to Daub and further in view of U.S. Patent No. 4,513,490 to Sendzimir under 35 U.S.C. § 103. Applicant respectfully traverses.

Applicant believes that, even if Sendzimir would have suggested the modification alleged by the Examiner, the invention as defined by claim 11 would not have been suggested for the reasons discussed above with regard to the teachings in Greenberger and Daub and the invention as defined by claim 1.

It is accordingly believed to be clear that none of the references, whether taken alone or in any combination, either show or suggest the features of claim 1. Claim 1 is, therefore, believed to be patentable over the art. The dependent claims are believed to be patentable as well because they all are ultimately dependent on claim 1.

In view of the foregoing, reconsideration and allowance of claims 1-11 and 16-36 are solicited.

In the event the Examiner should still find any of the claims to be unpatentable, counsel would appreciate receiving a telephone call so that, if possible, patentable language can be worked out.

Please charge any fees that might be due with respect to Sections 1.16 and 1.17 to the Deposit Account of Lerner Greenberg Stermer LLP, No. 12-1099.

Respectfully submitted,

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